IN THE CLAIMS

We claim:

1. An apparatus comprising:

a holder adapted to mount a substrate;

a stage adapted to position said holder in a chamber;

a pumping system adapted to evacuate said chamber;

an imaging system adapted to locate an opaque defect in said substrate;

a gas delivery system adapted to dispense a reactant gas towards said defect; and

an electron delivery system adapted to direct electrons towards said opaque defect.

- 2. The apparatus of claim 1 wherein said imaging system comprises an electron column.
- 3. The apparatus of claim 1 wherein said electron delivery system comprises an electron column.
- 4. The apparatus of claim 1 wherein said substrate comprises a transmissive DUV mask.
- 5. The apparatus of claim 1 wherein said opaque defect comprises chrome and said reactant gas comprises chlorine and oxygen.

6. EUV	The apparatus of claim 1 wherein said substrate comprises a reflective mask.
7. and s	The apparatus of claim 1 wherein said opaque defect comprises an absorber said reactant gas comprises Xenon Fluoride (XeF2).
8. said	The apparatus of claim 1 wherein said opaque defect comprises Carbon and reactant gas comprises water vapor or oxygen.
9. high	The apparatus of claim 1 further comprising a focusing system adapted to ly focus said electrons on said opaque defect.
10. scan	The apparatus of claim 1 further comprising a scanning system adapted to said electrons across said opaque defect.
11. to pr	The apparatus of claim 1 further comprising an acceleration system adapted ovide a low acceleration voltage for said electrons.
12. said	The apparatus of claim 1 further comprising a computer adapted to control electron delivery system.

13. A method comprising:

providing a substrate;
forming a layer over said substrate;
patterning said layer into a first region and a second region;
removing said layer in said first region;
inspecting said first region for an opaque defect;
forming a reactant gas over said opaque defect; and
directing electrons toward said opaque defect, said electrons inducing
said reactant gas to etch said opaque defect.

- 14. The method of claim 13 wherein said reactant gas etches said opaque defect without damage to said substrate.
- 15. The method of claim 13 wherein said opaque defect comprises chrome and said reactant gas comprises chlorine and oxygen.

16. A method comprising:

providing a substrate;

forming a mirror over said substrate;

forming a buffer layer over said mirror;

forming an absorber layer over said buffer layer;

patterning said absorber layer into a first region and a second region;

removing said absorber layer in said first region;

inspecting said first region for an opaque defect;

dispensing a reactant gas over said opaque defect;

scanning an electron beam over said opaque defect, said electron beam inducing said reactant gas to react with said opaque defect to form a volatile byproduct; and

removing said buffer layer in said first region.

17. The method of claim 16 wherein said opaque defect comprises an absorber and said reactant gas comprises Xenon Fluoride (XeF2).